

Application No.: 10/646,102
Response Date: March 9, 2005
Reply to Office Action dated: December 16, 2004

Amendments to the Claims

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of claims:

1. (original) An electric circuit test device for testing an electric circuit, the test device being insertable in a receptacle, the receptacle including electrical terminals coupled to the electrical circuit, the device comprising:
 - a housing characterized by a longitudinal axis;
 - a plug blade assembly disposed within the housing and configured to mate with the electrical terminals, electrical continuity being established between the plug blade assembly and the electric circuit;
 - a fault detection circuit coupled to the plug blade assembly and disposed within the housing, the fault detection circuit being configured to detect a circuit status condition in the electrical circuit; and
 - at least one circuit status indicator assembly coupled to the fault detection circuit and normal thereto, the at least one circuit status indicator assembly including a plurality of semiconductor light indicators connected substantially normal to the at least one circuit status indicator assembly, the plurality of semiconductor light indicators being configured to emit a code corresponding to the circuit status condition in a direction normal to the longitudinal axis with a viewing angle less than approximately 30°.
2. (original) The device of claim 1, wherein the fault detection circuit is configured to detect the circuit status condition in a single phase grounded neutral electric circuit.
3. (original) The device of claim 2, wherein the circuit status condition includes an open hot wire status condition.
4. (original) The device of claim 2, wherein the circuit status condition includes an open

neutral wire status condition.

5. (original) The device of claim 2, wherein the circuit status condition includes an open ground status condition.

6. (original) The device of claim 2, wherein the circuit status condition includes a hot/neutral reversed polarity status condition.

7. (original) The device of claim 2, wherein the circuit status condition includes a properly wired and grounded status condition.

8. (original) The device of claim 1, wherein the fault detection circuit includes a mis-wire circuit portion, the mis-wire protection circuit portion prevents component destruction during a mis-wire condition, such that the device is operable after the mis-wire condition.

9. (original) The device of claim 8, wherein the mis-wire protection circuit portion includes at one diode component inhibiting reverse biased current.

10. (original) The device of claim 2, wherein the single phase grounded neutral electric circuit supports 120 VAC, 277 VAC, or 347 VAC.

11. (original) The device of claim 1, wherein the fault detection circuit includes a redundant ground current safety portion that prevents ground current from exceeding 500 microamperes.

12. (original) The device of claim 11, wherein the ground current safety portion includes a plurality of resistors in series.

13. (original) The device of claim 1, wherein the fault detection circuit is configured to detect the circuit status condition in a multi-phase center grounded electric circuit.

14. (original) The device of claim 13, wherein the circuit status condition includes an open hot wire condition.

15. (original) The device of claim 13, wherein the circuit status condition includes an open ground status condition.
16. (original) The device of claim 13, wherein the circuit status condition includes a hot and ground reversed status condition.
17. (original) The device of claim 13, wherein the circuit status condition includes an open hot wire status condition.
18. (original) The device of claim 13, wherein the circuit status condition includes a properly wired and grounded status condition.
19. (original) The device of claim 1, wherein the code emitted by the at least one circuit status indicator assembly is a Boolean code.
20. (original) The device of claim 1, wherein the plurality of semiconductor light indicators further comprises a plurality of LED elements coupled to the fault detection circuit by way of a circuit board standoff element, the plurality of LED elements being configured to display the code.
21. (original) The device of claim 20, wherein the plurality of LED elements comprise LEDs of a different color.
22. (original) The device of claim 1, wherein the at least one fault detection circuit is implemented on a printed circuit board, the at least one fault detection circuit being coupled to the plug blade assembly by a torsion spring connector disposed on the printed circuit board.
23. (original) The device of claim 1, further comprising an acoustic device configured to emit the circuit status condition.
24. (canceled).

25. (original) An electric circuit test device for testing an electric circuit, the test device comprising:

- a housing characterized by a longitudinal axis;
- a connector cable coupled to the electric circuit and to the housing;
- electrical terminals coupled to the connector cable, electrical continuity being established between the electrical terminals and the electric circuit;
- a fault detection circuit coupled to the electrical terminals and disposed within the housing, the fault detection circuit being configured to detect a circuit status condition in the electrical circuit and connector cable; and
- at least one circuit status indicator assembly coupled to the fault detection circuit and normal thereto, the at least one circuit status indicator assembly including a plurality of semiconductor light indicators connected substantially normal to the at least one circuit status indicator assembly, the plurality of semiconductor light indicators being configured to emit a code corresponding to the circuit status condition in a direction normal to the longitudinal axis with a viewing angle less than approximately 30°.

26. (original) The device of claim 25 wherein the electric circuit includes a receptacle with second electrical terminals coupled to the electric circuit, further comprising a second electric circuit test device coupled to the receptacle and the connector, electrical continuity being established between the receptacle and the connector configured to detect a circuit status condition in the electrical circuit.

27. (original) The device of claim 25 wherein the electric circuit includes a receptacle with second electrical terminals coupled to the electric circuit, further comprising:

- a second housing characterized by a longitudinal axis;
- a plug blade assembly disposed within the housing and configured to mate with the second electrical terminals, electrical continuity being established between the plug blade assembly and the second electrical terminals;
- a second fault detection circuit coupled to the plug blade assembly and disposed within the housing, the fault detection circuit being configured to detect a

circuit status condition in the electrical circuit; and

at least one second circuit status indicator assembly coupled to the fault detection circuit and normal thereto, the at least one circuit status indicator assembly including a plurality of semiconductor light indicators connected substantially normal to the at least one circuit status indicator assembly, the plurality of semiconductor light indicators being configured to emit a code corresponding to the circuit status condition in a direction normal to the longitudinal axis with a viewing angle less than approximately 30°.

28. (original) The device of claim 27, wherein the electric circuit includes a load device further comprising a ground sensing wire coupled to the fault detection circuit, the ground sensing wire also being configured to be connected to a ground disposed on the load device, the circuit indicator assembly being configured to emit the circuit status condition detected in the load device, the connector cable, and the electric circuit.

29. (original) The device of claim 25, wherein the electric circuit includes a load device further comprising a ground sensing wire coupled to the fault detection circuit, the ground sensing wire also being configured to be connected to a ground disposed on the load device, the circuit indicator assembly being configured to emit the circuit status condition detected in the load device, the connector cable, and the electric circuit.

30. (original) The device of claim 29, wherein the circuit status indicator assembly further includes at least one standoff member coupled to the printed circuit board and extending in a direction substantially normal to the printed circuit board, the plurality of semiconductor light indicators being coupled to the stand-off member and extending in a direction substantially normal to the at least one standoff member.

31. (original) The device of claim 29, wherein the circuit status indicator assembly includes an electromagnetic emission device configured to emit the circuit status condition.

32. (original) The device of claim 31, wherein the electromagnetic emission device includes an RF transmission device.

33. (original) The device of claim 25, wherein the circuit status condition includes an open hot wire condition.
34. (original) The device of claim 25, wherein the circuit status condition includes an open ground status condition.
35. (original) The device of claim 25, wherein the circuit status condition includes a hot and ground reversed status condition.
36. (original) The device of claim 25, wherein the circuit status condition includes an open hot wire status condition.
37. (original) The device of claim 25, wherein the circuit status condition includes a properly wired and grounded status condition.
38. (original) The device of claim 25, wherein the fault detection circuit is configured to detect the circuit status condition in a single phase grounded neutral electrical circuit.
39. (original) The device of claim 38, wherein the single phase grounded neutral electric circuit supports 120 VAC, 277 VAC, or 347 VAC.
40. (original) The device of claim 25, wherein the fault detection circuit is configured to detect circuit status condition in a multi-phase center grounded electric circuit.